

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1, 3-10 and 12-27 are presently active in this case. The present Amendment amends Claim 1 without introducing any new matter, and cancels Claims 2 and 11 without prejudice or disclaimer.

In the outstanding Office Action, Claims 1-27 were rejected under 35 U.S.C. §103(a) as unpatentable over Ishii (U.S. Patent No. 6,636,194) in view of Yamazaki (U.S. Patent No. 6,522,319) and Sato et al. (U.S. Patent No. 5,712,652, herein "Sato"). Claim 13 was indicated as allowable if rewritten in independent form. Applicant acknowledges with appreciation the indication of allowable subject matter.

However, since Applicant considers that Claim 1, from which Claim 13 depends, defines patentable subject matter, Claim 13 is maintained in dependent form at the present time.

Independent Claims 1 and 10 are amended for clarification purposes, to recite "for stopping a supply of the power source voltage from the power source voltage generating unit to the data driver during a period of the second display." This feature finds non-limiting support in the disclosure as originally filed, for example in original Claims 2 and 11, and at page 2, lines 20-25. Consequently, Claims 2 and 11 are cancelled without prejudice.

In response to the rejection of Claims 1-27 under 35 U.S.C. §103(a), Applicant respectfully requests reconsideration of this rejection and traverses the rejection, as discussed next.

Briefly recapitulating, amended Claims 1 and 10 relate to a display device including, *inter alia*, a data driver and a scan driver in order to perform a first display, and a memory device driver for controlling the write of the graphic data held in the memory devices into the

pixels in order to perform a second display. Claim 1 further recites a power source voltage control circuit for stopping a supply of the power source voltage from a power source voltage generating unit *to the data driver* during the period of the second display, and Claim 10 further recites a power source voltage generating and stopping circuit for stopping generation of the power source voltage in the power source voltage generating unit *to the data driver* during a period of the second display.

In other words, Claim 1 stops the supply of the power source voltage to the data driver and the scan driver during a period of a second display in which the graphic data held in the memory devices are written into the pixels, and in Claim 10 stops generation of the power source voltage. As explained in Applicant's specification, the claimed invention improves upon conventional display devices by reducing power consumption.¹

Applicant respectfully submits that all the applied references Ishii, Yamazaki and Sato fail to teach or suggest the power source voltage control circuit for stopping a supply of the power source voltage from the power source voltage generating unit *to the data driver* during a period of the second display, as recited in amended Claims 1 and 10, as next discussed.

The outstanding Office Action relies on Ishii's column 6, lines 25-30 and Yamazaki's column 7, line 37 as teaching a power source voltage control circuit 104 for stopping the power source voltage to the data driver during the second display.² Applicant respectfully disagrees, since at column 6, Ishii explains that circuit 104 is a liquid crystal pixel driver for driving pixels, as can be further seen in Ishii's Figure 1, where two voltage signal lines 118 and 119 deliver either a first voltage or a second voltage to a pixel electrode 106 of an individual liquid crystal pixel 105. Delivering a first or second voltage to a pixel electrode, as taught by Ishii, *is not* stopping the power source voltage to the data driver during the second display, as recited in Applicant's independent Claims 1 and 10.

¹ See Applicant's specification at page 2, lines 3-7 and page 5, lines 15-16.

² See outstanding Office Action from page 2, line 22, to page 3, line 2, and at page 4, lines 9-13.

Yamazaki does not remedy the deficiencies of Ishii, since Yamazaki merely discloses that a driver circuit includes a charge-pump circuit that is stopped during a particular period, by setting all the non-selection voltages to a single level to avoid voltage variations.³ Accordingly, Yamazaki also fails to disclose to stop supply or generation of the power source voltage to the data driver and the scan driver during the second display. The outstanding Office Action relies on Yamazaki's text at column 7, lines 33-43. This passage of Yamazaki recites that the driving-voltage forming circuit includes a charge-pump circuit that switches among a plurality of capacitor connections to generate boosted voltages and dropped voltages. However, Yamazaki teaches that the operation of the charge-pump circuit is stopped *in the period when the individual application voltages for all the scanning electrodes and all the signal electrodes are fixed*.⁴ Reading Yamazaki, a person of ordinary skill in the art would understand that the charge-pump circuit stopped in the period when the individual application voltages for all the scanning electrodes and all the signal electrodes are fixed,⁵ *is not* a power source voltage control circuit for stopping the supply of the power source voltage to the data driver and the scan driver during a period of a second display, in which the graphic data held in the memory devices are written into the pixels, as recited in Applicant's independent Claims 1 and 10. Applicant respectfully submits that it is not possible to write graphic data into the pixels while the scanning electrodes and all the signal electrodes are fixed, the fixing of the voltages being taught by Yamazaki.

Further, as explained in Yamazaki from column 7, line 60 to column 8, line 1, Yamazaki's period during which the operation of the charge-pump circuit is stopped *is not the same* period as the record display period, during which the graphics data held in the memory device is written into the pixels, as recited in Applicant's Claim 1 and 10. Yamazaki

³ See Yamazaki at column 7, lines 17-24.

⁴ See Yamazaki, for example at column 7, lines 33-37.

⁵ See Yamazaki, for example at column 7, lines 23-30.

expressly states that the period during which the operation of the charge-pump circuit is stopped is not the same period in which the selection voltages are applied to display lines, at which time the potentials of all the scanning electrodes and all the signal electrodes are fixed.⁶ Accordingly, a charge-pump circuit configured to stop during the period when the individual application voltages for all the scanning electrodes and all the signal electrodes are fixed, as taught in Yamazaki, *is not* a power source voltage control circuit for *stopping the supply of the power source voltage to the data driver*, during a period of the second display, as recited in independent Claims 1 and 10.

The reference Sato, relied upon by the outstanding Office Action to form the 35 U.S.C. §103(a) rejection, does also not remedy the deficiencies of Ishii and Yamazaki. Sato is concerned with liquid display device, wherein each pixel has a memory cell, so that a constant voltage can be used during a still pixel display, instead of a AC voltage, to thereby reduce power consumption.⁷ However, Sato is also silent on the a power source voltage control circuit for stopping the supply of the power source voltage to the data driver.

Therefore, even if the combination of the Ishii and Yamazaki and/or Sato were proper, the combination fails to teach every element of the claimed invention. Specifically, the combination fails to teach the claimed power source voltage control circuit for stopping the supply of the power source voltage during a period of the second display, in which the graphic data held in the memory devices are written into the pixels. Accordingly, Applicant respectfully traverses, and requests reconsideration of, this rejection based on these patents.⁸

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in

⁶ See Yamazaki at column 7, lines 61-65.

⁷ See Sato in the Abstract, and in column 6, lines 50-64.

⁸ See MPEP 2142 stating, as one of the three "basic criteria [that] must be met" in order to establish a *prima facie* case of obviousness, that "the prior art reference (or references when combined) must teach or suggest all the claim limitations," (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

condition for formal Allowance. A Notice of Allowance for Claims 1, 3-10 and 12-27 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

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